

Amendment and Response

Applicant: Vladimir Abramov

Serial No.: 10/667,561

Filed: September 22, 2003

Docket No.: T395.101.101

Title: UNIVERSAL MULTIFARIOUS GEARBOX OF MUTUALLY DEFINITE UNITS AND METHOD THEREFORE

REMARKS

The following remarks are made in response to the Non-Final Office Action mailed December 1, 2004. In that Office Action, the Examiner acknowledged receipt of the information disclosure statement filed on September 22, 2003, which is noted with appreciation. In addition, the Examiner objected to the Specification due to informalities found at page 9, line 11, and objected to claims 1, 3, 8, 16, 19, and 20 due to informalities.

Claims 2-21 were rejected under 35 U.S.C. §112, second paragraph, as being indefinite. Claims 1 and 2 were rejected under 35 U.S.C. §102(b) as being unpatentable over Razzacki, U.S. Publication No. 2004/0040397 ("Razzacki"). Claims 1, 2, 4, and 7-19 were rejected under 35 U.S.C. §102(b) as being unpatentable over Horsch, U.S. Patent No. 6,190,280 ("Horsch"). Claims 5 and 6 were rejected under 35 U.S.C. §103(a) as being unpatentable over Horsch in view of Herlitzek, U.S. Patent No. 4,245,519 ("Herlitzek").

The Examiner indicates that claim 3, although objected to as being dependent from a rejected base claim, would be allowable if re-written in independent form, which is noted with appreciation. The Examiner's indication that claims 20 and 21, although rejected, would be allowable if re-written or amended to overcome the rejections under 35 U.S.C. §112, second paragraph, is noted with appreciation.

With this Response, the Specification has been amended to include a claim of priority to a previously filed provisional application and to correct informalities. Claims 16-21 have been canceled, claims 1-9 and 11-15 have been amended, and claims 22-27 are newly presented. Claims 1-15 and 22-27 are pending in the application and are presented for consideration and allowance.

Objections to Specification

The disclosure was objected to because of informalities found on page 9, line 11. With this Response, the paragraph beginning at page 9, line 6 is presented in rewritten form. It is believed that this correction will traverse the objection to the Specification.

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Objections to Claims 1, 3, 8, 16, 19, and 20

Claims 1, 3, 8, 16, 19, and 20 were objected to due to informalities. With this Response, each of the claims objected to has been amended or canceled to correct the informality noted by the Examiner. It is believed that with these corrections, claims 1, 3, and 8, are in proper form for allowance.

35 U.S.C. §112, Second Paragraph Rejections

Claims 2-21 were rejected under 35 U.S.C. §112, second paragraph, as being indefinite. With this response, the antecedent basis of all claims, including claims 2, 4, and 13, has been cured.

In addition, and with regard to claims 14-19, the Examiner notes that the term “pair” as recited in claims 14-19 is indefinite. In this regard, each of currently pending claims 14-19 has been amended to correct this informality such that claims 14-15 now particularly point out and distinctly claim subject matter that the Applicant regards as the invention.

With these amendments, it is respectfully submitted that claims 2-15 recite patentable subject matter and are in form for allowance, such that rejections to these claims should be withdrawn.

35 U.S.C. §§102 & 103 Rejections

Claims 1 and 2 were rejected under 35 U.S.C. §102(b) as being unpatentable under Razzacki. The Office Action characterizes Razzacki as disclosing a transmission having a plurality of shafts with a gear forming a gearset between the shafts and being sized and varied by a constant step ratio, “which is the same for each gearset.”

Razzacki teaches, with reference to Fig. 1, determining the low gear ratio at step 10, determining the high gear ratio at step 12, determining the total ratio speed at step 14, determining the number of gear ratios at step 16, determining the number of ratio steps at step 18, determining a ratio variable at step 20, creating a geometric sequence at step 22, and using

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the variables from the above steps in step 24 where the geometric sequence is solved for the step ratio constant r . In particular, Razzacki teaches at page 2, paragraph 22 that in the preferred embodiment the next step of creating a geometric sequence at block 22 is done such that the percent step of the ratio of any two consecutive terms of the geometric sequence equals a constant, called the step ratio constant, thus establishing uniformly progressive ratio steps. Note that in both paragraph 24 and paragraph 26, Razzacki teaches solving R_1 / R_n (the low gear ratio divided by the high gear ratio) results in a single, scalar whole number. Consequently, the ratio R_1 / R_n is a constant, such that the gears taught in Razzacki are sized to vary by a constant ratio. Consequently, Razzacki teaches at most gears being sized to have a single ratio, where this step ratio is a constant.

In contrast, amended independent claim 1 recites a gearbox comprising a plurality of gears forming gearsets, each gearset including at least one shaft extending from the gearset, wherein the gearsets are sized having ratios varying by degrees of separation of a common ratio in a geometric sequence. It is believed that Razzacki does not teach or suggest gearsets being sized having ratios varying by degrees of separation of a common ratio in a geometric sequence.

As a point of reference, claim 2 depends from independent claim 1. Dependent claim 2 recites a further limitation of the gearbox in claim 1 wherein the degrees of separation of the common ratio in the geometric sequence for all gearsets between adjacent pairs of shafts is the same. Under the doctrine of claim differentiation, independent claim 1 must recite a claim scope different in extent than dependent claim 2 such that the limitation of claim 1 "all the gears are sized having ratios" indicates more than one ratio varying by degrees of separation of a common ratio in a geometric sequence.

With this in mind, it is respectfully submitted that Razzacki does not teach or suggest gearsets sized to have ratios varying by degrees of separation of a common ratio in a geometric sequence, as otherwise required by independent claim 1. It is respectfully submitted that claims 1 and 2 recite patentable subject matter. It is respectfully requested that the rejections to claims 1 and 2 be withdrawn. Allowance of these claims is respectfully requested.

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Claims 1, 2, 4, and 7-19 were rejected under 35 U.S.C. §102(b) as being unpatentable over Horsch. The Office Action characterizes Horsch as disclosing a transmission having a plurality of shafts with a gear forming a gearset between the shafts and being sized and varied by a degree, "which is the same for each gearset."

As described above, independent claim 1 recites a gearbox comprising a plurality of gears forming gearsets, wherein the gearsets are sized having ratios varying by degrees of separation of a common ratio in a geometric sequence, such that the ratios varying by degrees of separation of a common ratio are not constrained to have a degree of difference that is the same for each gearset. As a point of reference, support can be found throughout the Specification, and in particular at page 6, lines 16-25 that each unit has a different degree in a geometric sequence from the other units. For example, page 6, line 19 describes gears sized to have ratios varying by degrees from 1-1.2, and from 1-1.44, and from 1-1.728, etc.

With this in mind, it is respectfully submitted that Horsch does not teach or suggest gearsets sized to have ratios varying by degrees of separation of a common ratio in a geometric sequence, as otherwise required by independent claim 1. Claims 2, 4, and 7-19 depend, either directly or indirectly, from amended independent claim 1, which is believed to recite patentable subject matter and is in form for allowance. With this in mind, it is respectfully requested that the rejections to claims 1, 2, 4, and 7-19 be withdrawn. Allowance of these claims is respectfully requested.

Claims 5 and 6 were rejected under 35 U.S.C. §103(a) as being unpatentable over Horsch in view of Herlitzek ('519). Herlitzek is characterizing as teaching a transmission having a join gear mounted to a shaft. However, claims 5 and 6 ultimately depend from amended independent claim 1, which is respectfully believed to recite patentable subject matter that is non-obvious in view of the cited references. With this in mind, it is respectfully submitted that claims 5 and 6 are also, therefore, non-obvious. It is requested that the rejections to claims 5 and 6 under 35 U.S.C. §103(a) be withdrawn.

Claims 22-27 are newly presented to particularly point out and distinctly claim subject matter that the inventor regards as his invention. It is believed that claims 22-27 recite

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patentable subject matter, are not taught or suggested by the cited references, and are in form for allowance.

Allowable Subject Matter

The Examiner indicates that claim 3, although objected to as being dependent from a rejected base claim, would be allowable if re-written in independent form, which is noted with appreciation.

The Examiner indicates that claims 20 and 21, although rejected, would be allowable if re-written or amended to overcome the rejections under 35 U.S.C. §112, second paragraph, which is noted with appreciation.

CONCLUSION

In view of the above, Applicant respectfully submits that pending claims 1-15 and 22-27 are in form for allowance and are not taught or suggested by the cited references. Therefore, reconsideration and withdrawal of the rejections, and allowance of claims 1-15 and 22-27, is respectfully requested.

It is believed that no fees are due. However, if the Patent Office determines that a fee is due, the Patent Office is hereby authorized to charge Deposit Account No. 50-0471.

The Examiner is invited to telephone the Applicant's representative at the below-listed number to facilitate prosecution of this application.

Any inquiry regarding this Amendment and Response should be directed to Timothy A. Czaja at Telephone No. (612) 573-2004, Facsimile No. (612) 573-2005. In addition, all correspondence should continue to be directed to the following address:

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Dicke, Billig & Czaja, PLLC
Fifth Street Towers, Suite 2250
100 South Fifth Street
Minneapolis, MN 55402

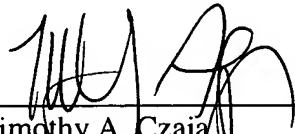
Respectfully submitted,

Vladimir Abramov,

By his attorneys,

DICKE, BILLIG & CZAJA, PLLC
Fifth Street Towers, Suite 2250
100 South Fifth Street
Minneapolis, MN 55402
Telephone: (612) 573-2004
Facsimile: (612) 573-2005

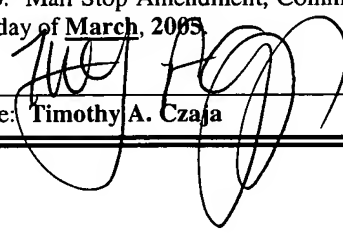
Date: 15 MARCH 1, 2005
TAC: jmc



Timothy A. Czaja
Reg. No. 39,649

CERTIFICATE UNDER 37 C.F.R. 1.8:

The undersigned hereby certifies that this paper or papers, as described herein, are being deposited in the United States Postal Service, as first class mail, in an envelope address to: Mail Stop Amendment, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450 on this 15 day of March, 2005.

By 
Name: Timothy A. Czaja